

*Excerpted from the forthcoming book*

# **Web 2.0 How-To for Educators**

**Gwen Solomon and Lynne Schrum**

Web 2.0, the second generation of the World Wide Web, allows us to connect, create, collaborate, and share information. When we bring Web 2.0 tools into the classroom, we transform learning. By applying these tools thoughtfully, we see a shift in student engagement, creativity, and higher-order learning skills. In *Web 2.0 How-To for Educators*, the authors of the best-selling *Web 2.0: New Tools, New Schools* introduce you to more Web 2.0 tools and expertly lead you through classroom and professional applications that help improve student and teacher learning.

In the following chapter excerpt, the authors introduce wikis, explain how they work, and explore the myriad ways wikis can be used in the classroom to facilitate collaborative learning projects.

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## **WHAT is a Wiki?**

Wikis are web pages that students can use to write, edit, and add elements, such as images and video, to create collaborative projects. When the assignments are tailored well, the projects involve a group of students in researching, synthesizing, and analyzing information, writing about what they've learned, and evaluating and editing one another's work. The end result is a product that all members of the group believe is their best work.

The most well-known wiki in public use is Wikipedia, a collaborative encyclopedia that includes an enormous amount of information. It is constantly updated. Contributors and evaluators monitor and edit the entries, which serves as a way to authenticate the contents so that people can trust the information. The most popular wikis in education are PBworks (formerly PBwiki) and Wikispaces.

## **WHY is a Wiki a useful tool?**

Class assignments that include elements of project-based learning, collaboration, authentic work, and an audience can help students develop and refine higher level thinking skills. Wikis are good tools to use for such assignments.

The possibilities for classroom uses include group collaboration and problem solving, peer editing during the writing process, and electronic portfolios. Students produce a shared document online by writing, editing, and revising it in their own class, across a grade, school, district, or with others. They can work from anywhere, which means they are able to contribute 24/7 rather than being limited to the school day or class period. If they are creating work that others will use to learn about the topic, both the task and the audience are authentic.

Students read and build on each other's work in these collaborative online environments because they can do research, analyze what they've read, and synthesize it into useful

knowledge before contributing their work. Then, the group reflects on it; and they discuss and edit it with the knowledge that changing anything is easy and that it can easily be changed back as previous versions are saved.

An example would be a team-writing assignment in which students research a topic in the curriculum, analyze what they find, enter their syntheses into the wiki, and consult with one another to make sure the topic is covered thoroughly and accurately. They can use peer editing to make sure the writing is clear and concise.

Because everyone in the group can add, edit, delete, or change the contents, this makes the process democratic. Changes are visible instantly, which encourages responsibility for one's actions and accountability to the group. In addition, it is possible for the teacher to track the work done by each student in a collaborative effort, which encourages a high level of contribution and quality performance. According to Lake (2009), "Students need to experience this in order to become prepared for work that can take place virtually, perhaps over long distances, often within shifting work groups."

## **WHEN do teachers use Wikis?**

### **Classroom Integration**

Wikis are effective tools for fostering collaborative learning. According to Tom Nelson, a technology coach at Liberty High School in Liberty, Pennsylvania's Southern Tioga School District:

When using a wiki with students, we have them post technology projects in the wiki and then use the discussion tab to discuss the work entered. For example, a student creates and embeds a toondoo (Editor's Note: toondoo.com is a cartoon creator) to the class wiki. The teacher posts a question on the discussion board about the project and requires all students to view the project and post a response. This helps foster the collaborative learning environment by providing the opportunity for peer-to-peer evaluation. (T. Nelson, electronic communication, August, 2009).

Integrating technology is not the end of the story. Clearly, any assignment must be based on good pedagogy. For example, in a TechLearning blog post, Jon Orech (2009a) admonishes readers that we need to rely on time-tested collaborative learning strategies and not just focus on the tools. What's new is that having the tool makes it easier to accomplish the task. He says,

Many times in wikis, students add, but are reluctant to edit the work of others.... As a result, most wikis take on the look of a patchwork quilt, with each “panel” reflecting the ideas of a single individual. Don’t get me wrong, the quilt model can fulfill some great objectives; however, for a true collaborative writing process, the final product needs to resemble, not a quilt, but a blanket. To achieve this, teachers, once again must embrace those Cooperative Learning structures in cyberspace that they did in their classrooms.

Wikis provide three options that are unlike most composing software and that offer interesting possibilities for learning and teaching. First, wikis allow people to edit someone else’s work. Second, they retain previous versions that writers can revert to. Third, they keep track of everyone’s individual entries and edits.

What the first option provides is the ability for true group collaboration on a document with peer editing. The second prevents the edits from writing over the original permanently and losing words, ideas, or manners of expression that might actually have been the better way to say something. Educators must teach students how to evaluate the accuracy and appropriateness of content and revert to a previous version if content has been modified incorrectly.

The third option allows teachers to track students’ work; they can see exactly how much work, and of what caliber, each member of the group contributed. If the final product and the process are graded separately, teachers can review the number of contributions as well as the quality. Students, aware that teachers can see all, are motivated to do their best.

In addition to having students read other groups’ completed wikis—vetted by the teacher for accuracy, of course—on topics in the curriculum and learn content from them rather than from textbooks, teachers can invite parents and the community to read the work as a culminating activity that brings in a wider authentic audience.

If students are graded on the final product, they share a common goal and would want the work to be the best possible. When they help one another by editing and making changes to each other’s work, it would be for the good of the product and the entire group.

Students learn from one another and the results, both for the learner as a thinking person and for the end product, can be greater than a single isolated learner can achieve. In addition, students engaged in providing explanations to other students can learn the subjects better themselves.

When students take ownership of both their contributions and the product as a whole, they can learn to respect the contributions and thinking of others and take pride in the results. The collaboration itself can result in creativity that learners spark in one another as they work together (and challenge one another's thinking) to improve the work.

Students share control of the environment and can monitor one another. Access is open to the students who are collaborating by password protection, but only one person at a time can add content or edit. Peer editing means that the original copy is deleted but the earlier versions are saved, which makes it possible to revert to a previous version or reconstruct content.

Wikis can be set up to notify the person managing the wiki each time someone makes a change; and if it's not appropriate, the manager (teacher or student leader) can erase it. Both monitoring and limiting access usually are enough to prevent inappropriate content and language, as well as spam.

Unlike word processors and other desktop publishing tools, most wikis provide basic editing only, which means that students focus on the message rather than the format. Entering and editing text is easy and straightforward, and there's no real learning curve for students. Again, the focus is on the subject matter because the tool is transparent.

Each student's work is saved and teachers are able to track what each one has contributed to the product, both their contributions and their corrections to another student's work. Reviewing their entire body of contributions allows teachers to see how each student's thinking, writing, and editing skills have grown over time. Because of this, some teachers are using Wikis as electronic portfolios for student projects.

In "Using Wikis as Electronic Portfolios," Huff (2008) explains:

Using inquiry-based learning, I created a wiki page to pose questions, point students to resources, and encourage them to find their own answers and solutions for creating the portfolio. Then, rather than give them step-by-step directions for creating the portfolio, I chunked the project into small deadlines and guided and supported them through the process as they asked questions, experimented with different tools, and struggled with strategies for organizing the portfolios. I was amazed at the results: students created websites, new blogs, and combinations of the two. They weren't just stuffing papers in a manila folder: they were thinking critically and creatively, problem-solving, reflecting.

Wikis make good places to post information that both students and parents can read. Students have a way to check the specifics of an assignment in case they forget, and parents can monitor the work. For example, Karey Killiak from Millville High School in Millville, Pennsylvania, says, "We use the public wiki to post assignments, lessons, and links

to resources. We use the private wikis with individual classes so that students can have discussions and post their assignments and work collaboratively on assignments” (K. Killiak, personal communication, August, 2009).

Millville High uses wikis in almost all subject areas. In world literature, students discuss elements of an epic in the discussion tab and create original epics as a class. In 12th-grade environmental science, the teacher has been using the Discussion area to create class discussions. On the public page for geometry students, the teacher has several links to applications that students access and use to solve equations. Eighth grade English students write advice for incoming seventh graders.

## **Turbo-Charged Wikis**

### **Technology Embraces Cooperative Learning**

By infusing cooperative learning strategies student-generated wikis become a much more productive activity. First, a teacher must establish a collaborative environment from the beginning of class. A wiki-based project should not be the first time students work together. Collaborative projects work well, but only if an environment of cooperation already exists.

The assignment of the project must possess two qualities. First, it must be an authentic problem or situation that must be solved collaboratively. Second, the final product must be utilized by another audience, preferably classmates to advance the learning of the entire class. In other words, the wiki cannot result in an assignment that is merely “turned in.” Also teachers need to remember that the wiki is only the tool to enhance learning; the problem solving is what drives the project.

In addition, teachers need to supply a system of expectations, due dates, and a constant flow of feedback throughout the development of project. They must build in time for students to meet during class to negotiate meaning in the planning and revision stages. Assessment must be a collaborative endeavor, with students having input on the rubric criteria prior to the completion of the project, as well as an opportunity to self assess. Adherence to these strategies will ensure greater learning (Orech, 2008).

